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ABSTRACT

This paper describes the BITNET communications system, a network which links more than 1,000 computers at over 350 institutions of higher education and research centers, including almost 200 in Europe (EARN), Canada (NetNorth), and Japan and the Far East. First, the capabilities of the "store-and-forward" network are described, including an explanation of the system's features and the typical uses faculty can make of them, e.g., communicating with colleagues in the United States and around the world; organizing name, address, and telephone lists; developing new contacts in an area of professional expertise; transferring files between colleagues at the same or different institutions; requesting information that is not available through conventional channels; and providing instructional support. Specific procedures for using the system are then explained in step-by-step form. Finally, answers are provided to both general and specific questions about the system, which is supported by the BITNET Network Support Center comprising the Network Information Center (BITNIC) at EDUCOM and the Development and Operations Center (BITDOC) at City University of New York. (EW)

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COMMUNICATIONS MADE EASY (AND FREE!)

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Abstract

Do you want to communicate with colleagues at other institutions in the USA and the World? At zero cost? Quickly? Do you want to transfer documents? Keep up on new computer developments? Identify others interested in your special research topic? Well, if so, this BITNET presentation will be important to you.

Session Approach

Our plan for this session is first to outline the capabilities of BITNET. This will be done by explaining its features and the typical uses faculty can make of them. Additionally large graphics will present the network's topology. Subsequently, specific procedures for using the system will be explained. To enhance learning, participants will be provided illustrated documentation of these in step-by-step form. Given a room with telephone connections, we will also demonstrate these procedures using a large screen computer projector. Throughout the presentation and demonstration, participants will be afforded an opportunity for questions. After the session, and pending your scheduling of sufficient time, the

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participants can also be provided an on-line opportunity to practice the procedures for themselves.

Presentation Summary

This presentation will make extensive use of visuals to explain the multitude of applications afforded faculty by the BITNET system. As such, it will highlight many important capabilities afforded to faculty who use the system. Additionally, it will ALSO demonstrate to those present how to actually use BITNET! The latter will simply require that the presentation is scheduled in a room with a standard telephone connection.

Startup:

Demonstration of BITNOTE to colleague at the University of Quebec in Hull, Canada

Demonstration of RDRLIST (an electronic in-basket)

- o PEEK desired file/message
- o RECEIVE
- o Forward message/file to colleague using CC /

The BITNET System:

BITNET Network Information Center
(INFO@BITNIC)

EDUCOM PO Box 364, Princeton NJ 08540
609-734-1878

BITNET is a network linking more than 1000 computers at over 350 institutions of higher education and research centers including almost 200 in Europe (EARN), Canada (NetNorth), and Japan and the Far East. BITNET is a "store-and-forward" network; information originating at a given site is received by intermediate network sites and forwarded to its destination. BITNET users share information via real-time terminal messages and electronic mail; transfer of documents, programs, and data; and access to the BITNET server machine and its associated data services.

BITNET is supported by the BITNET Network Support Center comprising the Network Information Center (BITNIC) at EDUCOM and the Development and Operations Center (BITDOC) at City University of New York.

To facilitate the use of BITNET, institutions incorporate BITNET access into their local mail systems, providing a straightforward user interface. Much of the software used to interface to BITNET is readily available on a cooperative basis or commercially.

The computers in BITNET are interconnected by leased lines supporting 9600 baud data transmission. BITNET functions with both IBM and non-IBM computers that can communicate using IBM's VM-based RSCS (Remote Spooling Communications Sub-system) or .one of several other IBM communications environments. Programs have been developed by both vendors and BITNET member institutions to provide BITNET access in DEC10/20, VAX/UNIX, VAX/VMS, CDC Cyber, and Sperry environments.

User support and information facilities available on BITNET include a general request mailbox (INFO@BITNIC), an on-line user directory, and a file server that provides help files, information about network nodes, protocol documents, network policy information, a newsletter, instructions for using network gateways, information about local software tools to facilitate BITNET use, and details about conferences of interest to the BITNET community.

BITNET continues to expand its membership and its facilities. Interconnecting BITNET with other networks has increased its potential for information exchange. Gateways already exist between BITNET and ARPANET, the network of the Defense Advanced Research Projects Agency; CSNET, a network of over 150 computer science research departments and institutions; MAILNET, EDUCOM's inter-institutional mail system; and UUCP, a UNIX-based dial-up network with over 1500 nodes world wide. Other gateways are in various stages of development. There is also a restricted access facility to VNET, IBM's internal communications network.

BITNET Network Support Center at EDUCOM and City University of New York

EDUCOM and the City University of New York have joined in a coordinated effort to provide a Network Support Center for BITNET. EDUCOM operates the BITNET Information Center to provide user services and administrative support to the BITNET community. The City University of New York's BITNET Development and Operations Center guides technical, systems maintenance and software development effort for the network.

EDUCOM's goal in developing the BITNET Network Information Center (BITNIC) is to promote the use of BITNET in higher education. Activities include an on-line directory, paper and electronic newsletters, end-user documentation, workshops, publications, seminars, and conference presentations. In addition, the BITNIC will provide direct user-service functions, gather and test BITNET user interfaces, negotiate for communications and equipment discounts, form interest groups that use BITNET for communication, and, inconjunction with the BITNET Executive Committee, codify network procedures and policies.

The goal of the BITNET Development and Operations Center (BITDOC) at CUNY is to improve existing BITNET services and implement new ones. The BITDOC also maintains a dedicated support center computer and provides second-level technical support to BITNET users. BITDOC projects include implementing a computer-based conferencing capability accessible via BITNET; enhancing the BITNET file server, which provides directory and other information about BITNET users, sites, and services; developing improved user interfaces to the network; experimenting with network protocols, such as X.25 and TCP/IP; and gathering and analyzing network traffic and usage information.

Funding for many of the Network Support Center activities has been provided by IBM. For additional information about services available through the BITNET Network Support Center, send electronic mail to INFO@BITNIC.

EDUCOM - BITNET CUNY/UCC - BITNET

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(609) 734-1878 (212) 903-3600

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Capabilities of the system:

1. Communicating with colleagues in the USA and around the world using BITNOTE.

   - o BITNOTE userid
   - o BITNOTE userid then get and insert existing file using GET
   - o BITNOTE userid CC: userid. . .

2. Organizing name, address and telephone lists.

   - o NAMES

3. Developing new, and subsequently exploring, contacts in your area of professional expertise.

   - o BITNOTE to (eg. president of institution via key person identified by BROWSE BITNET BITUSERS)
   - o BROWSE BITNET BITUSERS
   - o BROWSE BITNAUTS LIST

4. Transferring files between colleagues at the same or at different institutions.

   - o SENDFILE fn ft fm userid@node

5. Requesting information that you have been unable to obtain through conventional channels, i.e. research and problem solving.

   - o Review ARPA DIGESTS
   - o eg. FILELIST * DIGEST to review the latest scoop on artificial intelligence, computer graphics, machine specific developments, and the like.
   - o Then use BITNOTE userid@node.network

(this gets difficult but it can be done!)

6. Instructional support

   - o Student messaging to professors or vice versa
   - o Distribution of course materials to students
   - o Interaction on evolving projects, eg. term papers
   - o Electronic bulletin board to keep all current

Questions and Answers about BITNET:

1. What is BITNET?

   - o A system of leased telephone/data lines between major universities and other institutions in:

     -USA
     -Canada
     -Europe
     -Japan

   - o Each institution's computer is called a NODE. Some institutions have more than one NODE, eg. UM has 11.
   - o BITNET, i.e. the links between the NODES also provides for a set of gateways to other networks such as:

     -ARPAnet -MAILNET -CHAOSNET
     -UUCP -CSNET -CCNET

   - o A rough idea of the BITNET system's topology is shown in the map.
   - o The BITNET system allows you to VERY CONVENIENTLY send messages and/or files to users at your site and/or at other nodes as well.
   - o Essentially the system is analogous to other messaging systems such as MEMO, PROFS or NOTE -- BUT it is a whole lot more convenient and it permits

internode communication.

o UMC's implementation of BITNET is on the CMS machines (UMVMA and UMCVMB) and it is essentially free to authorized users of these systems, ie. to:

-Faculty
-Staff
-Students

2. What do I need to access BITNET?

o Authorization, ie. an account (USERID) on UMCVMB or UMVMA

o A device/computer capable of emulating an IBM 327x display terminal.

- Via the IBM 7171 protocol converter
- Or via Sim3278 on UMVMA
- The 7171 can handle any of the following computers and make the necessary conversions:

ADDS	ADM3a	ADM31	DM1520
DM3045	IBM3101	TVI912	TVI950
VIS50	VT10	YTERM	

o Communications software that allows your computer (whatever it is) to emulate one of the above terminals

3. How do I send a message?

a. Log onto your UMCVMB or UMVMA account

b. Type: BITNOTE USERID at NODE

c. When the BITNOTE header appears enter the subject of your note and end it with a return.

d. Now enter the body of your note. You are in the XEDIT environment so all XEDIT commands, like: GET fn ft fm, work.

e. When you finish the note, just press PF5 to send the BITNOTE on its way -- to your addressee at UMC, or in the USA or in Europe, Japan, Israel or Canada.

4. How do I receive a message?

   a. Log onto your UMCVMB or UMVMA account.

   b. Check your virtual reader file by typing: QUERY READER.

   c. Type: RDRLIST to display of all files on your reader.

   d. PEEK (to learn more about the file you are interested in) into the file of your choice by placing the cursor on the target file's line and pressing PF 11.

   e. If you want this file, you may receive it (i.e. place it on your mainframe account's virtual disk by pressing PF 9. Alternatively, if it is not the file you want, just press PF 3 to get out of PEEKING the file (note the file remains on your reader).

   f. If you know which file you want to receive, just place the cursor on its line and press PF 9.

5. What advanced features are offered and what can I do with them?

   a. The NAMES facility:

      A handy nickname and address file system that also permits the development of a distribution list.

   b. The NOTEBOOK facility:

      Allows you to keep mail in various NOTEBOOKS, ie. files, by either subject or addressee.

      Also allows automatic logging of mail sent and received if you desire.

   c. The NMENU facility:

      Makes access to your NOTEBOOKS and contents easy.